

What is claimed is:

1. A radiation-curable composition comprising:
 - (i) a cationically polymerizable component;
 - (ii) a cationic photoinitiator;
 - (iii) a free radical polymerizable component other than caprolactone acrylate; and
 - (iv) a free radical photoinitiator;
 wherein the composition, after cure, has a clarity of more than 90%.

2. The composition of claim 1, wherein said free radical polymerizing component is selected from the group consisting of:
 - (a) non-aromatic free radical polymerizable components comprising at least one C₁-C₁₀ ether group; and
 - (b) aromatic free radical polymerizable components comprising more than four C₁-C₁₀ ether groups.

3. The composition of claim 1, wherein said free radical polymerizable component is represented by the following formula (3):



wherein

X represents a branched or unbranched aliphatic group comprising 1-10 carbon atoms;

n represents an integer from 1 to 6;

each R independently represents a branched or unbranched aliphatic group comprising from 1-10 carbon atoms;

each m independently represents an integer from 0-10;

at least one m represents an integer of at least 1; and

each A independently represents a free radical polymerizable group.

4. The composition of claim 1, wherein said free radical polymerizing component is selected from the group consisting of alkoxyated bisphenol A diacrylate, tripropyleneglycol diacrylate, polypropyleneglycol dimethacrylate, alkoxyated neopentylglycol diacrylate,

alkoxylated hexanediol diacrylate, polytetrahydrofuran diacrylate, and alkoxylated trimethylolpropane triacrylate.

5. The composition of claim 1, wherein said free radical polymerizing component component is a diacrylate component.
6. The composition of claim 5, further comprising a free radical polymerizable component having at least three radiation-curable groups.
7. The composition of claim 1, wherein said composition further comprises caprolactone acrylate.
8. A process for producing a three-dimensional object comprising rapid prototyping the composition of claim 1.
9. A three dimensional object obtained by the process of claim 8.
10. A radiation-curable composition comprising:
 - (i) a cationically polymerizable component;
 - (ii) a first free radical polymerizable component, said first free radical component being selected from the group consisting of
 - (a) non-aromatic free radical polymerizable components comprising at least one C₁-C₁₀ ether group;
 - (b) aromatic free radical polymerizable components comprising more than four C₁-C₁₀ ether groups; and
 - (iii) a second free radical polymerizable component other than said first free radical polymerizable component.wherein said composition, after cure, has a clarity ratio greater than 1.03.
11. The radiation-curable composition of claim 10, wherein said first free radical polymerizable component comprises at least two acrylate groups.
12. The radiation-curable composition of claim 10, wherein said first free radical polymerizable component comprises at least two ethoxy, propoxy, or butoxy groups.

13. The radiation-curable composition of claim 10, wherein said first free radical polymerizable component comprises at least two ethoxy, propoxy, or butoxy groups.
14. The radiation-curable composition of claim 10, wherein said first free radical polymerizable component is selected from the group consisting of alkoxylated bisphenol A diacrylate, tripropyleneglycol diacrylate, polypropyleneglycol dimethacrylate, alkoxylated neopentylglycol diacrylate, alkoxylated hexanediol diacrylate, polytetrahydrofuran diacrylate, and alkoxylated trimethylolpropane triacrylate.
15. The radiation-curable composition of claim 10, wherein said radiation-curable composition comprises, relative to the total weight of the composition, more than 2 wt% of said first free radical polymerizable component.
16. The radiation-curable composition of claim 1, wherein said radiation-curable composition comprises, relative to the total weight of the composition, at most 15 wt% of said first free radical polymerizable component.
17. The radiation-curable composition of claim 1, wherein said radiation-curable composition comprises, relative to the total weight of the composition, 3-10 wt% of said first free radical polymerizable component.
18. The radiation-curable composition of claim 1, wherein said cationically polymerizable component is an epoxy resin.
19. The radiation-curable composition of claim 1, wherein said cationically polymerizable component includes a cyclohexene oxide component.
20. The radiation-curable composition of claim 1, further comprising a cationic photoinitiator.
21. The radiation-curable composition of claim 20, wherein said cationic photoinitiator comprises antimonate.

22. The radiation-curable composition of claim 10, further comprising a hydroxy-functional component.
23. The radiation-curable composition of claim 22, wherein said hydroxy-functional component is a polyether polyol.
24. The radiation-curable composition of claim 10, wherein said second free radical polymerizable component comprises at least 5 free radical polymerizable groups.
25. The radiation-curable composition of claim 10, wherein said ratio is greater than 1.07.
26. The radiation-curable composition of claim 10, wherein said ratio is greater than 1.2.
27. The radiation-curable composition of claim 10, wherein said composition, after cure, has a clarity of more than 90%.
28. A process for forming a three-dimensional object comprising rapid prototyping the composition of claim 10.
29. An object formed with the process of claim 28.
30. A process for improving, by a factor more than 1.03, the clarity of a product obtained by curing a radiation-curable hybrid composition, said process comprising:
- adding, prior to said curing, a compatible free radical polymerizable component to said hybrid composition.
31. The process of claim 30, wherein said compatible free radical polymerizable component is selected from the group consisting of
- non-aromatic free radical polymerizable components comprising a C₁-C₁₀ ether group, preferably at least two C₂-C₄ ether groups; and
 - aromatic free radical polymerizable components comprising more than four C₁-C₁₀ ether groups, preferably more than four C₂-C₄ ether groups; and
 - hydroxyfunctional free radical polymerizable ester components.